

This listing of claims will replace all prior versions and listings of claims in the above-identified application.

Listing of Claims

1. **(Currently Amended)** A method for maintaining a common session identifier in a network, comprising:

associating a session identifier with a user, wherein

the session identifier is associated with the user by a network access server, and

the network access server is configured to include the session identifier in a first request sent to an AAA module; **and**

providing the session identifier to an off-load server, wherein

the session identifier is provided to the off-load server directly from the network access server,

the off-load server is configured to establish a network connection between communication equipment operated by the user and a server operated by a network service provider, and

the off-load server is configured to include the session identifier in a second request sent to the AAA module.

2. **(Original)** The method recited in Claim 1, wherein:

providing the session identifier further comprises providing the session identifier as a non-required parameter in accordance with a tunnel protocol.

3. **(Original)** The method recited in Claim 1, wherein:

providing the session identifier further comprises providing the session identifier in a session setup request.

4. (Original) The method recited in Claim 1, further comprising:
determining whether the session identifier is provided as a non-required parameter
in accordance with a tunnel protocol.

5. (Canceled)

6. (Original) The method recited in Claim 1, further comprising:
associating a start record with the session identifier.

7. (Previously Presented) The method recited in Claim 6, further comprising:
providing the start record to the AAA module.

8. (Original) The method recited in Claim 1, further comprising:
associating a stop record with the session identifier.

9. (Previously Presented) The method recited in Claim 8, further comprising:
providing the stop record to the AAA module.

10. (Previously Presented) A method for maintaining a common session
identifier in a network, comprising:
determining whether a session identifier value is provided by an access server to
an offload server, wherein
the access server is configured to perform pre-authentication processing
for a user,

PATENT

the offload server is configured to receive the session identifier value directly from the access server, and

the off-load server is configured to use a packetized data protocol to establish a network connection between communication equipment operated by the user and a server operated by a network service provider in response to receiving a request from the access server; and

assigning, if the session identifier value is not provided by the access server to the off-load server, the session identifier value to the user, wherein the assigning is performed by the off-load server.

11. (Original) The method recited in Claim 10, further comprising:

inspecting a parameter list for the session identifier value.

12. (Original) The method recited in Claim 10, wherein:

determining whether the session identifier value is provided by the access server further comprises determining whether the session identifier value is contained within a non-required parameter string provided by the access server.

13. (Original) The method recited in Claim 10, further comprising:

associating a start record with the session identifier.

14. (Original) The method recited in Claim 13, further comprising:

providing the start record to a software module that provides for performing accounting processing.

15. (Original) The method recited in Claim 10, further comprising:
associating a stop record with the session identifier.
16. (Original) The method recited in Claim 15, further comprising:
providing the stop record to a software module that provides for performing
accounting processing.
17. (Previously Presented) The method recited in Claim 10, further
comprising:
providing the session identifier from the access server to the off-load server.
18. (Original) The method recited in Claim 17, wherein:
providing the session identifier further comprises providing the session identifier
as a non-required parameter in accordance with a tunnel protocol.
19. (Previously Presented) A system, comprising:
a network access server, wherein the network access server is configured to
generate a session identifier, the network access server being further
configured to provide the session identifier directly to an off-load server
that is configured to establish a network connection between
communication equipment operated by a user and a server operated by a
network service provider, and both the network access server and the off-
load server are configured to send the session identifier to an AAA
module.

20. (Previously Presented) The system recited in Claim 19, further comprising:

the off-load server, the off-load server being coupled to receive the session identifier from the network access server.

21. (Previously Presented) The system recited in Claim 19, further comprising:

the AAA module that is configured to perform authentication, the module being further configured to receive the session identifier from the network access server.

22. (Previously Presented) The system recited in Claim 19, wherein:

the network access server is further configured to provide the session identifier in a non-required parameter list according to a tunnel protocol.

23. (Previously Presented) A system, comprising:

an off-load server, wherein the off-load server is configured to receive a session identifier directly from a network access server, the off-load server is configured to establish a network connection between communication equipment operated by the user and a server operated by a network service provider, and both the network access server and the off-load server are configured to send the session identifier to an AAA module.

24. (Previously Presented) The system recited in Claim 23, further comprising:

the AAA module, the AAA module being further configured to receive the session identifier from the network access server.

25. (Previously Presented) The system recited in Claim 23, wherein:

the off-load server is further configured to receive the session identifier from the network access server in a non-required parameter list according to a tunnel protocol.

26. (Previously Presented) The system recited in Claim 23, wherein:

the off-load server is further configured to generate a start record, the off-load server being further configured to associate the start record with the session identifier; and

the off-load server is further configured to provide the start record to the AAA module.

27. (Previously Presented) The system recited in Claim 23, wherein:

the off-load server is further configured to generate a stop record, the off-load server being further configured to associate the stop record with the session identifier; and

the off-load server is further configured to provide the stop record to the AAA module.

28. (Previously Presented) An apparatus, comprising:

means for associating a session identifier with a user, in response to a network access server detecting that communication equipment operated by the

user is attempting to connect to a server operated by a network service provider; and

means for providing the session identifier directly from an access server to an off-load server, wherein

the off-load server is configured to use a packetized data protocol to establish a network connection between the communication equipment operated by the user and the server operated by the network service provider in response to receiving a request from the network access server.

29. (Original) The apparatus recited in Claim 28, wherein:

means for providing a session identifier further comprises means for providing the session identifier as a non-required parameter in accordance with a tunnel protocol.

30. (Original) The apparatus recited in Claim 28, wherein:

means for providing a session identifier further comprises means for providing the session identifier in a session setup request.

31. (Original) The apparatus recited in Claim 28, further comprising:

means for determining whether the session identifier is provided as a non-required parameter in accordance with a tunnel protocol.

32. (Canceled)

33. (Original) The apparatus recited in Claim 28, further comprising:

means for associating a start record with the session identifier.

34. (Previously Presented) The apparatus recited in Claim 33, further comprising:

means for providing the start record to an AAA module.

35. (Original) The apparatus recited in Claim 28, further comprising:

means for associating a stop record with the session identifier.

36. (Previously Presented) The apparatus recited in Claim 35, further comprising:

means for providing the stop record to an AAA module.

37. (Previously Presented) An apparatus, comprising:

means for determining whether a session identifier value is provided by an access server to an off-load server, wherein

the access server is configured to perform pre-authentication processing for a user,

the offload server is configured to receive the session identifier value directly from the access server, and

the off-load server is configured to use a packetized data protocol to establish a network connection between communication equipment operated by the user and a server operated by a network service provider in response to receiving a request from the access server; and

means for assigning, if the session identifier value is not provided by the access server to the off-load server, the session identifier value to the user, wherein the off-load server comprises the means for assigning.

38. (Original) The apparatus recited in Claim 37, further comprising:
means for inspecting a parameter list for the session identifier value.
39. (Original) The apparatus recited in Claim 37, wherein:
means for determining whether the session identifier value is provided by the
access server further comprises means for determining whether the session
identifier value is contained within a non-required parameter list provided
by the access server.
40. (Original) The apparatus recited in Claim 37, further comprising:
means for associating a start record with the session identifier.
41. (Original) The apparatus recited in Claim 40, further comprising:
means for providing the start record to a software module that provides for
performing accounting processing.
42. (Original) The apparatus recited in Claim 37, further comprising:
means for associating a stop record with the session identifier.
43. (Original) The apparatus recited in Claim 42, further comprising:
means for providing the stop record to a software module that provides for
performing accounting processing.
44. (Previously Presented) The apparatus recited in Claim 37, further
comprising:
means for providing the session identifier from the access server to the off-load
server.

45. (Previously Presented) The apparatus recited in Claim 44, further comprising:

means for providing the session identifier further comprising means for providing the session identifier as a non-required parameter in accordance with a tunnel protocol.

46. (Previously Presented) A computer program product, encoded in computer readable storage media, comprising:

a first set of instructions, executable on a computer system, configured to assign a session identifier to a user, in response to a network access server detecting that communication equipment operated by the user is attempting to connect to a server operated by a network service provider; and

a second set of instructions, executable on the computer system, configured to provide the session identifier directly to an off-load server, wherein the off-load server is configured to use a packetized data protocol to establish a network connection between the communication equipment operated by the user and the server operated by the network service provider in response to receiving a request from the network access server.

47. (Previously Presented) The computer program product of claim 46, encoded in computer readable storage media, wherein:

the second set of instructions, executable on the computer system, is further configured to provide the session identifier as a non-required parameter in accordance with a tunnel protocol.

48. (Previously Presented) The computer program product of claim 46, encoded in computer readable storage media, wherein:

the second set of instructions, executable on the computer system, is further configured to provide the session identifier in a session setup request.

49. (Previously Presented) The computer program product of claim 46, encoded in computer readable storage media, further comprising:

a third set of instructions, executable on the computer system, configured to determine whether the session identifier is provided as a non-required parameter in accordance with a tunnel protocol.

50. (Canceled)

51. (Previously Presented) The computer program product of claim 46, encoded in computer readable storage media, further comprising:

a third set of instructions, executable on the computer system, configured to associate a start record with the session identifier.

52. (Previously Presented) The computer program product of claim 51, encoded in computer readable storage media, further comprising:

a fourth set of instructions, executable on the computer system, configured to provide the start record to an AAA module.

53. (Previously Presented) The computer program product of claim 46, encoded in computer readable storage media, further comprising:

a third set of instructions, executable on the computer system, configured to associate a stop record with the session identifier.

54. **(Currently Amended)** The computer program product of claim 53, encoded in computer readable storage media, further comprising:

a fourth set of instructions, executable on the computer system, configured to provide the stop record to an AAA module.

55. **(Currently Amended)** A computer program product, encoded in computer readable storage media, comprising:

a first set of instructions, executable on a computer system, configured to determine whether ~~the a~~ session identifier value is provided by an access server to an off-load server, wherein

the access server is configured to perform pre-authentication processing for a user,

the offload server is configured to receive the session identifier value directly from the access server, and

the off-load server is configured to use a packetized data protocol to establish a network connection between communication equipment operated by the user and a server operated by a network service provider, in response to receiving a request from the access server; and

a second set of instructions, executable on a computer system, configured to cause the off-load server to assign, if the session identifier value is not provided by the access server to the off-load server, the session identifier value to the user.

56. **(Previously Presented)** The computer program product of claim 55, encoded in computer readable storage media, further comprising:

a third set of instructions, executable on a computer system, configured to inspect a parameter list for the session identifier value.

PATENT

57. (Previously Presented) The computer program product of claim 55, encoded in computer readable storage media, wherein:

the first set of instructions, executable on a computer system, is further configured to determine whether the session identifier value is contained within a non-required parameter string provided by the access server.

58. (Previously Presented) The computer program product of claim 55, encoded in computer readable storage media, further comprising:

a third set of instructions, executable on a computer system, configured to associate a start record with the session identifier.

59. (Previously Presented) The computer program product of claim 58, encoded in computer readable storage media, further comprising:

a fourth set of instructions, executable on a computer system, configured to provide the start record to a software module that provides for performing accounting processing.

60. (Previously Presented) The computer program product of claim 55, encoded in computer readable storage media, further comprising:

a third set of instructions, executable on a computer system, configured to associate a stop record with the session identifier.

61. (Previously Presented) The computer program product of claim 60, encoded in computer readable storage media, further comprising:

a fourth set of instructions, executable on a computer system, configured to provide the stop record to a software module that provides for performing accounting processing.

PATENT

62. (Previously Presented) The computer program product of claim 55, encoded in computer readable storage media, further comprising:

a third set of instructions, executable on a computer system, configured to provide the session identifier from the access server to the off-load server.

63. (Previously Presented) The computer program product of claim 62, encoded in computer readable storage media, wherein:

the third set of instructions, executable on a computer system, is further configured to provide the session identifier as a non-required parameter in accordance with a tunnel protocol.

64. (Previously Presented) The method of claim 1, wherein the off-load server provides one of Point-to-Point Protocol (PPP), Serial Line Internet Protocol (SLIP), Multipoint Point-to-Point Protocol, and PPP over Ethernet (PPPoE) service to the network access server.

65. (Previously Presented) The method of claim 64, further comprising: assigning the session identifier to a call, prior to providing the session identifier to the off-load server; and sending an access request to an Authentication, Authorization, and Accounting (AAA) server, wherein the access request comprises the session identifier and a Dialed Number Identification Service (DNIS) number associated with the call, and the assigning, the providing, and the sending are performed by a network access server.

66. (Previously Presented) The method of claim 65, further comprising:
sending a second access request from the off-load server to the AAA server,
wherein
the second access request comprises the session identifier and a username
associated with the call.
67. (Currently Amended) The method of claim 1, further comprising:
both the network access server and the off-load server sending the session
identifier to ~~an~~ the Authentication, Authorization, and Accounting
(AAA) module.
68. (Previously Presented) A method comprising:
assigning a session identifier to a call detected by a network access server; and
providing the session identifier from the network access server to an off-load
server, wherein the off-load server provides one of Point-to-Point Protocol
(PPP), Serial Line Internet Protocol (SLIP), Multipoint Point-to-Point
Protocol, and PPP over Ethernet (PPPoE) service to the network access
server.
69. (Previously Presented) The method of claim 68, further comprising:
sending an access request to an Authentication, Authorization, and Accounting
(AAA) server, wherein
the access request comprises the session identifier and a Dialed Number
Identification Service (DNIS) number associated with the call, and
the assigning, the providing, and the sending are performed by the
network access server.

PATENT

70. (Previously Presented) The method of claim 69, further comprising:
sending a second access request from the off-load server to the AAA server,
wherein
the second access request comprises the session identifier and a username
associated with the call.